

a memory device formatted to store data indicative of the history of the ink cartridge, data indicative of environment of use of the ink cartridge, and data indicative of cleaning of the print head, said memory device having an area in which the data is stored in a rewritable manner.

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Sub C2
3. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

- a container having an ink chamber for containing ink therein;
- an ink supply port for supplying the ink from said ink chamber to the print head;
- a memory device formatted to store data indicative of the history of the ink cartridge, said memory device having an area in which the data is stored in a rewritable manner; and

wherein the data includes data indicative of a maintenance processing required for use in a reproduction of the ink cartridge.

4. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

- a container having an ink chamber for containing ink therein;
- an ink supply port for supplying the ink from said ink chamber to the print head;
- a memory device formatted to store data indicative of the history of the ink cartridge, said memory device having an area in which the data is stored in a rewritable manner; and

wherein the data includes data indicative of a maintenance processing required for use in a reproduction of the ink cartridge;

wherein the data includes data indicative of a condition of cleaning.

5. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

a container having an ink chamber for containing ink therein;

an ink supply port for supplying the ink from said ink chamber to the print head;

a memory device formatted to store data indicative of the history of the ink cartridge, said memory device having an area in which the data is stored in a rewritable manner;

wherein the data includes data indicative of a maintenance processing required for use in a reproduction of the ink cartridge; and

wherein the data includes data indicative of a condition of exchange of a part of the ink cartridge.

7. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

a container having an ink chamber for containing ink therein;

an ink supply port for supplying the ink from said ink chamber to the print head;

a memory device formatted to store data indicative of the history of the ink cartridge, said memory device having an area in which the data is stored in a rewritable manner;

wherein the data includes data indicative of the time of final ink depletion of the ink cartridge; and

wherein the data includes data indicative of a maintenance processing required for use in a reproduction of the ink cartridge..

8. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

a container having an ink chamber for containing ink therein;

an ink supply port for supplying the ink from said ink chamber to the print head;

a memory device formatted to store data indicative of the history of the ink cartridge, said memory device has an area in which the data is stored in a rewritable manner; and

wherein the data includes data indicative of an environment in which the ink cartridge is used.

13. (Twice Amended) An ink cartridge for an ink jet type printing apparatus having a print head, the ink cartridge comprising:

a container having an ink chamber for containing ink therein;

an ink supply port for supplying the ink from said ink chamber to the print head; and

a memory device for storing data related to the ink or the ink cartridge, said memory device storing therein data relating to a minimum ink amount to be contained in the ink cartridge, said memory device having an area in which data indicative of a residual ink amount is stored in a rewritable manner;

wherein said ink cartridge is operable to alter an ink discharge operation based on the stored data relating to the minimum ink amount and the residual ink amount.

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21. (Twice Amended) An ink-jet printing apparatus according to claim 14, wherein said control device judges from the data, stored in said memory device, whether or not a next reproduction of the ink cartridge is possible.

22. (Twice Amended) An ink-jet printing apparatus according to claim 14, wherein said control device judges whether or not the next reproduction of the ink cartridge is possible in accordance with the data stored in said memory device, and the control device displays an indication that the ink cartridge is to be discarded when it judges that the reproduction is impossible.

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23. (Twice Amended) An ink-jet printing apparatus according to claim 21, wherein said judgment is made in accordance with the number of reproductions, a lifetime, a time period after detection of ink depletion, and an environment of use.

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27. (Twice Amended) A cartridge reproducing device for an ink cartridge for an ink jet type printing apparatus having a print head, the reproducing device comprising:

means for reading data, related to a history of use of the ink cartridge to be reproduced, from a memory device provided on the ink cartridge;

a control device which controls a reproduction processing apparatus in accordance with said data, and causes at least data, representing the number of reproductions and the time of reproduction, to be stored in said memory device after the reproducing operation is finished; and

said control device determines when and if the print head needs cleaning and controls the cleaning.

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33. (Twice Amended) An ink-jet printing apparatus comprising:

a print head for ejecting ink droplets;

an ink cartridge containing ink therein for supplying the ink to said print head;

a memory device storing data related to the ink cartridge, data related to environment of use of the ink cartridge, and data related to cleaning of the print head; and

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a control device accessible to said memory device for controlling said print head in accordance with data supplied from the exterior, said control device judges, from the data stored in said memory device, whether the next reproduction of the ink cartridge is possible.

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35. (Twice Amended) An ink-jet printing apparatus according to claim 14, wherein said control device judges whether a next reproduction of the ink cartridge is possible in accordance with the data stored in said memory device, and the control device displays that the ink cartridge is discarded if it judges that the reproduction is impossible.

REMARKS

Claims 1-40 are all the claims pending in the application. Claims 36-40 stand allowed. Claims 21-23, and 27-35 would be allowable if amended to overcome the various objections and rejections under 35 U.S.C. § 112(2). Applicant submits that these objections and rejections have been overcome as discussed below in section I and II, and accordingly, Applicant respectfully submits that these claims are now in allowable form.

I. Claim Objections

Claims 13, 23 and 27 stand objected to based on a number of syntax and idiomatic informalities. Applicant has amended the claims and corrected the informalities as the Examiner has suggested as shown above, the scope of the claims have not been narrowed. Therefore,